

1 **LARGE SCALE ELECTRONIC DISPLAY COMBINED**
2 **WITH AN INTERACTIVE TERMINAL**
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4

5 Cross Reference to Related Application

6 This application claims the benefit of U.S. provisional serial no. 60/239,513, filed
7 October 11, 2000.

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9 Incorporation by Reference

10 The computer program listing appendix on the accompanying compact discs of
11 computer program listing appendix labeled copy 1 and copy 2, each containing the file WEB
12 BILLBOARD 1.0 created on October 9, 2001, each containing 13,100 bytes is hereby
13 incorporated by reference to form a part of this specification. This file comprises a suitable
14 source code to be loaded in the interactive terminal computer to carry out the various functions
15 described herein.

16

17 Background of the Invention

18 Large scale billboards are often used in high traffic public places such as airports,
19 malls, plazas, etc for commercial advertising. Electronic displays are sometime used for this
20 purpose, exhibiting large scale video images, either still frame or full motion videos to be eye-
21 catching and to have maximum commercial impact.

22 Public interactive terminals are also in widespread use at such locations for
23 obtaining information, such as for hotels, restaurants, etc., or conducting internet transactions,
24 frequently housed in kiosks mounting fixed advertising graphics.

1 It is costly to have such large scale electronic displays in these locations due to the
2 high expense incurred for rental of the space and for the hardware necessary to display full
3 motion videos and the need to maintain and periodically update the displays. On the other hand,
4 the commercial value of the great public exposure of displays located in these locations is high.

5 It is the object of the present invention to provide a large scale electronic display
6 which is combined with an interactive terminal to maximize the usage of the display hardware to
7 improve its cost effectiveness and to enhance its commercial value by providing other modes of
8 commercial promotion.

9 Another object of the invention is to reduce the cost of maintaining and updating a
10 large scale electronic display.

11

12 Summary of the Invention

13 The above object and others, which will become apparent upon a reading of the
14 following specification and claims, are achieved by mounting an electronic billboard comprised
15 of a large scale electronic display screen to a kiosk or booth so as to exhibit an image readily
16 viewable by persons at some distance from the kiosk. A lower section of the electronic display
17 screen lies immediately above an interactive terminal in the kiosk, with chromogenic privacy
18 panels extending alongside the terminal to block viewing of the lower section of the screen but
19 only when there is a person using the interactive terminal so that the entire display is normally
20 viewable by passersby.

21 The display screen normally exhibits a large scale image for viewing by all
22 persons in the general area of the kiosk, an interactive terminal computer having a stored video

1 signal transmitted to the electronic display.

2 An approach within a short distance by an interested person is detected by a short
3 range motion-proximity sensor, which causes the computer to change the large scale image to a
4 display image having a message inviting use of the interactive terminal. When a person steps up
5 to the terminal and touches a keyboard, touch pad or a touch screen comprised of the lower
6 section of the screen, the computer causes a display image from the interactive terminal to be
7 exhibited confined to the lowermost section of the screen, and also causes the chromogenic
8 panels to be rendered opaque. The interactive terminal is controlled by a touch screen capability
9 of the electronic display, or by a keyboard, touch pad or mouse, or by manipulation of
10 combinations of the same, to allow stored information to be accessed and/or internet transactions
11 or data access to be enabled. The internet connection can also be used to change or update the
12 video signal data in the computer to modify the large scale and interactive terminal displays from
13 a remote location.

14

15 Description of the Drawing Figures

16 Figure 1 is a perspective view of a kiosk according to the present invention
17 equipped with a large scale electronic display screen and an interactive terminal.

18 Figure 2 is a downward looking diagrammatic representation of the large display
19 screen and interactive terminal together with other related components and connections.

20 Figure 3 is a front view of a typical screen display during the interactive mode.

21 Figure 3A is an enlarged view of the interactive terminal screen display.

1 Detailed Description

2 In the following detailed description, certain specific terminology will be
3 employed for the sake of clarity and a particular embodiment described in accordance with the
4 requirements of 35 USC 112, but it is to be understood that the same is not intended to be
5 limiting and should not be so construed inasmuch as the invention is capable of taking many
6 forms and variations within the scope of the appended claims.

7 Referring to the Drawings, and particularly Figure 1, a kiosk or booth 10 is shown
8 which has a base 16 mounting a large scale electronic display 12 held upright for viewing of
9 images comprising a full motion video, or changing still pictures which can be readily viewed by
10 passersby at some distance, thereby functioning as an electronic billboard.

11 A pair of normally transparent chromogenic privacy panels 14 project from each
12 side of the lower section of the electronic display 12 to define a privacy space therebetween
13 when the panels 14 are rendered opaque by an electrical circuit.

14 An interactive terminal computer 18 is located below and in front of the electronic
15 display 12 within the privacy space between the panels 14.

16 The terminal computer 18 can be a conventional IBM compatible PC using a
17 Windows 2000 operating program, of suitable speed and other capabilities to be able to exhibit
18 desired displayed images.

19 Figure 2 is a diagrammatic representation of the large area electronic display 12,
20 interactive terminal computer 18 and related system components.

21 The electronic display 12 is preferably a plasma panel display (PDP) 20, and
22 preferably can be used as a touch screen by means of a touch system 20 surrounding the

1 electronic display 12. The touch system 20 is comprised of a frame 22 containing an array of
2 LED's and electronics allowing a user to interact with the interactive terminal computer 18. A
3 suitable such system is available from Imaging Systems Technology (IST) of Toledo, Ohio,
4 under the Touch Screen trade name.

5 As noted, the electronic display 12 is quite large to exhibit images readily
6 viewable at a considerable distance, i.e., a screen size on the order of a 52 inches diagonal is
7 preferable although smaller sizes such as 42 inches diagonal may be adequate.

8 A video display signal is received by the PDP from the computer 18, the PDP
9 connected to the monitor part, which causes a full motion or a changing still image to normally
10 be exhibited, which in a first mode occupies the entire area of the display 12, the lower section
11 thereof viewable through the normally transparent panels 14.

12 A motion-proximity detector 26, which may be comprised of a downwardly
13 aimed conventional motion detector, produces a signal when a passerby approaches,
14 approximately within three feet, causing a second displayed image to be exhibited containing a
15 message inviting interactive use.

16 The motion-proximity sensor 26 is connected to the computer 18 as to a serial
17 port, with a suitable signal conversion, as by use of a relay, so as to be compatible with the
18 computer in any manner well known to those skilled in the art.

19 When the passerby steps up to the terminal 18 and interacts therewith, as by
20 pressing a key on a keyboard 28, or contacting a touch pad 30 (or mouse), or touches the
21 electronic display 12, the display is switched to a second mode, in which interactive terminal
22 images are exhibited on the lower section 32 of the display 12 within the space between the

1 privacy panels 14. At the same time, the panels 14 are rendered opaque by a control signal from
2 the computer 18 causing and electrical circuit to be operated to cause the panels 14 to become
3 partially or wholly opaque to block viewing of the lowermost section 32 by persons not within
4 the privacy space between the panels 14.

5 Other images can be exhibited at this time on the upper section of the display 12,
6 as shown in Figure 3.

7 Such chromogenic panels can be constructed in various ways, such as by applying
8 a special electrochromic film to glass panels, which film is normally transparent but which
9 becomes opaque when a current is applied (or removed). See U.S. patents 6,266,177; 6,245,262;
10 and 6,039,390 for examples of these films. Other chromogenic devices such as liquid crystal and
11 thermotropic devices are described in Project B3 Final Report, Task 18 by Mike Rubin of the
12 Lawrence Berkley National Laboratory, published in 1997 by IEA.

13 A card swipe reader 36 is also connected to the computer 18 for executing internet
14 transactions.

15 Figure 3 shows a typical interactive display contemplated, as for example
16 providing information and/or transactions in a large office building.

17 An image in the upper region of the display can remain while the interactive
18 terminal is in use.

19 Transactions and data transfers may be executed via the internet connection 34, in
20 response to input from the interactive terminal computer 18.

21 In addition, the display images can be updated or changed from a remote location.

22 A thermal printer 38 can also be connected to allow confirming copies of

1 transaction details.

2 The user can control the session variously by the touch screen capability, the
3 keyboard or the touch pad. Access to various hard drive content features regarding products,
4 retail store locations, miscellaneous relevant information, etc. is also thereby enabled.

5 By connection to the internet, commercial web sites of advertisers can be
6 contacted where user transactions may be enabled.

7 When the user ends his or her session, and steps away, the display 12 clears, and a
8 full scale image is again exhibited.

9 A typical computer program is set forth in the source code listing contained on the
10 compact disc appendix referenced above, although it should be noted that a mouse signal has
11 been substituted therein for the motion-proximity sensor signal contemplated.